Q1. Which diagnostic method is considered the gold standard for viral identification but is NOT suitable for rapid diagnosis of acute infection?

A. Antigen detection

B. PCR

C. Viral culture

D. Serologic IgM detection

Q2. The appearance of IgM before IgG is most useful for differentiating between:

A. DNA and RNA viruses

B. Acute and past infection

C. Symptomatic and asymptomatic infection

D. Localized and disseminated infection

Q3. A patient presents within 24 hours of fever and rash. Which diagnostic test is MOST useful at this stage?

A. IgG serology

B. IgM serology

C. PCR

D. Rising antibody titer

Q4. The principle of serologic diagnosis relies primarily on:

A. Detection of viral genome

B. Detection of host immune response

C. Growth of virus in culture

D. Visualization of cytopathic effect

Q5. Cross-reactivity between viral antigens mainly results in:

A. Increased sensitivity

B. Increased specificity

C. Decreased specificity

D. Complete diagnostic accuracy

Q6. Antigen detection assays are particularly valuable because they:

A. Detect host antibodies

B. Detect viral proteins directly

C. Require paired sera

D. Are useful only late in infection

Q7. A genital swab positive for viral antigen most strongly suggests:

A. Past exposure only

B. Presence of viral genome in host cells

C. Cross-reactive antibody

D. Laboratory contamination

Q8. A nasopharyngeal swab positive for viral antigen indicates:

A. Host immune activation

B. Viral protein expression at the sampling site

C. Latent infection

D. Previous vaccination

Q9. Which statement correctly differentiates antigen detection from serology?

A. Both detect host immune responses

B. Both detect viral nucleic acid

C. Antigen detection detects viral components directly

D. Serology detects viral proteins

Q10. Molecular detection techniques such as PCR are characterized by:

A. Random amplification of nucleic acids

B. Amplification of host DNA

C. Amplification of specific target sequences

D. Detection of antibodies only

Q11. Histopathologic diagnosis of viral infections is based primarily on:

A. Detection of viral antibodies

B. Detection of viral genome or virus-induced cellular changes

C. Culture growth only

D. Clinical presentation alone

Q12. In which situation can viral infection be diagnosed without laboratory confirmation?

A. Nonspecific febrile illness

B. Typical pathognomonic clinical features

C. Immunocompromised patients

D. Asymptomatic carriers

Q13. Which diagnostic approach is MOST appropriate for early detection of viral infection?

A. IgG serology

B. Rising antibody titers

C. PCR and antigen detection

D. Convalescent serum testing

Q14. PCR and antigen tests are negative, but IgM is positive. What is the MOST likely explanation?

A. Laboratory contamination

B. Chronic infection

C. Recent infection already cleared

D. False-positive IgM

Q15. Negative PCR, antigen, and serology definitively rule out viral infection. This statement is:

A. True

B. False

Q16. A patient has PCR positive, antigen positive, rising IgM, and absent IgG. This pattern indicates:

A. Declining viral replication

B. Past infection

C. Active acute infection

D. Reinfection

Q17. A recovering patient shows viral cytopathic inclusions on biopsy, but PCR and antigen are negative. These findings most likely represent:

A. Active viral replication

B. Laboratory artifact

C. Residual tissue damage

D. Reinfection

Q18. A healthcare worker has PCR positive, IgG positive, IgM negative results for a respiratory virus. The MOST likely diagnosis is:

A. Primary infection

B. Latent infection

C. Reinfection

D. False-positive PCR

Q19. Viral culture is positive, but PCR and antigen tests are negative. Which statement is MOST accurate?

A. Laboratory contamination is the only explanation

B. The virus was present in very low quantity in the original sample

C. PCR is always more sensitive than culture

D. The result is invalid

Q20. PCR for a DNA virus is positive, but repeat testing after 2 days is negative. The MOST likely explanation is:

A. The first result was necessarily false-positive

B. Viruses cannot be cleared rapidly

C. Viral load dropped below detection limit

D. PCR does not detect DNA viruses

Answer Key

1 C

2 B

3 C

4 B

5 C

6 B

7 B

8 B

9 C

10 C

11 B

12 B

13 C

14 C

15 B

16 C

17 C

18 C

19 B

20 C